REMARKS/ARGUMENTS

Specification

The Office has objected to title and abstract of the application. The applicants have amended both the title and abstract. This document accompanies a separate sheet having the newly amended abstract.

Drawings

The Office has objected to the figures as lacking descriptive text. The applicants appreciate the examiner's concern regarding alleged lack of descriptive text within the figures. However, it is unclear to the applicant which of the provisions under 37 CFR 1.84 would not be satisfied in the instant figures. Clarification is respectively requested or the objection should be withdrawn.

Double Patenting

The Office has provisionally rejected claims 19, and 21-24 under the doctrine of obviousness type double patenting over claims 1-5 of co-pending application having serial number 10/473713. The rejection is overcome by the amendments entered herein, and by the accompanying terminal disclaimer with respect to the co-pending application.

Claims

Claims 19 through 24 have been amended. Claims 25 through 30 are newly added.

35 USC 112

Support for the amended claim 19 and the newly added claims can be found at the following locations:

- Claim 19:
    - Target device having disaggregated elements: Page 2, line 5; Page 4, line 11-13
    - Network addresses: Page 6, line 8

- Protocol having packets Page 15, line 20
- Packets are routed to elements of a target device: Page 6, line 12

- Claim 25: Names (e.g. a network address) are resolved to IP addresses on Page 25, beginning at line 20.
- Claim 26: A client sends data to a target device on Page 29, line 3-14, among other places
- Claim 27: A client sends data to multiple elements on Page 7, lines 4-21, among other places.
- Claim 28: An element sends data to another element on Page 4, lines 6-9
- Claim 29: Packets can include location identifiers on Page 3, line 21-22, among other places.
- Claim 30: Contemplated commands are included in Table 1 on Pages 16 and 17.

It should also be noted that additional supporting material can be found in the incorporated references: PCT application no. PCT/US02/40199, entitled "Data Storage Devices Having IP Capable Partitions" and PCT application no. PCT/US02/40198, entitled "Electrical Devices With Improved Communication"

35 USC 102

The Office rejected claim 19 as being anticipated by Kim et al. (Internet Multicast Provisioning Issues for Hierarchical Architecture). The applicants respectfully disagree especially in view of the amendments entered herein. Kim describes a method for propagating multicast message across a network. Kim fails to teach, suggest, or motive a transferring data to a target device using a protocol that allows for communicating with disaggregate elements of the target device.

The Office also rejected claim 19 as being anticipated by Kobayashi (US Patent Publication 2001/0026550). The applicants respectfully disagree especially in view of the

amendments entered herein. Kobayashi describes selecting paths for packets as opposed to a transferring data to a target device using a protocol used for communicating with elements of a disaggregated device.

35 USC 103

Amended claim 19 recites:

> "A method of transferring data to a target device across a network, the method comprising:
>
> providing **a protocol** adapted to allow communication with **individual disaggregated elements** of the target device wherein the protocol includes:
>
> (a) network packets individually addressing the elements using distinct network addresses that are individually associated with each of the elements, and
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> (b) commands **providing instructions to the elements**; and
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> sending data to at least one of the elements via at least one of the network packets that encapsulates at least one of the commands." (emphasis added)

The Office rejected claim 20 under 35 USC 103 as being obvious over Kobayashi (US Patent Publication 2001/0026550) in view of McCanne et al (US Patent 7,120,666). The rejection has been overcome by amendments to parent claim 19. Kobayashi describes selecting paths based on various parameters including congestion. However, Kobayashi fails to teach, suggest, or motivate a protocol that allows for communication with disaggregated elements of a target device. Kobayashi also fails to teach, suggest, or motive protocol commands that provide instructions to the elements. McCanne fails to add anything to Kobayashi to arrive at the features of claim 19. Furthermore claim 20 recites that the element is adapted to respond to request. Kobayashi and McCanne also fail to teach, suggest, or motive that a disaggregated element of a device can be adapted to respond to requests, let alone respond with a single block of data.

The Office rejected claims 21-23 under 35 USC 103 as being obvious over Kobayashi (US Patent Publication 2001/0026550) in view of Bennett (US Patent 6,618,743). The applicants respectfully disagree, especially in view of the amendments entered herein. Neither Kobayashi nor Bennett, alone or combined, teach, suggest, or motivate providing a protocol used to communicate with elements of a disaggregated target device as recited by claim 19. Rather Bennett teaches having Autonomous Resource Units (ARU) on a computer, where the ARUs are independent, isolated work areas for users of the computer as opposed to being disaggegated elements of a target device. In this sense, each of Bennett's ARUs is considered a single self contained virtual computer rather then a functional portion of a target device. Additionally, Kobayashi and Bennett lack any teaching for disaggregated elements as recited in claims 21 and 22.

The Office rejected claim 24 under 35 USC 103 as being obvious over Kobayashi (US Patent Publication 2001/0026550) in view of Bennett (US Patent 6,618,743) and in further view of Wang (US Patent 6,693,912). The applicants respectfully disagree, especially in view of the amendments entered herein. Wang also lacks any additional insights that would bring Kobayashi and/or Bennett in alignment with the currently claimed features of claim 19.

It should be noted the applicants have appreciated that individual disaggregated elements of a target device can receive and execute "commands providing instructions to the elements" as recited by claim 1. Prior art systems communicate using protocols exchanged between a client device and an aggregated, self-contained device. Such prior art devices execute commands that provide instructions only to the self-contained device. For example, prior art storage systems that use iSCSI as a transport protocol require a self contained iSCSI device (*e.g.* an iSCSI target). iSCSI commands are sent to the iSCSI device which then executes the command, possibly targeting a storage area through the use of a LUN. It should be noted that an iSCSI storage area **does not** receive or execute the command as contemplated by the applicants. In the applicants' approach, commands are sent directly to the elements as a peer on a network using the element's distinct network address without requiring intermediary processing. Once an element recieves the command, it can execute the command no matter if the element is a physical or logical element of the target device.

One should note that the following cite art also fails to arrive at the claimed features of claim 19:

- Muller et al (US Patent 6,105,122) describes a method of transferring data from one node to another. However, Muller's system does not teach, suggest, or motive providing a protocol for communicating with disaggregated elements of a target device.

- West et al (US Patent 6,434,683) describes transferring difference data between storage devices. However, West also lacks any teaching, suggestion, or motivation for providing a protocol for communicating with disaggregated device elements, among other things, as recited in claim 19.

- Kuik et al (US Patent 7,188,194) describes a target-LUN mapping in an iSCSI system over a storage network. Kuik also lacks any teaching, suggestion, or motivation of the features of claim 19. Furthermore, in the applicants' approach, simply no mapping is required.

- Edsall et al (US Patent Publication 2003/0118053) describes encapsulating a virtual storage area network identifier within a packet for transmission in a storage area network. Edsall also fails to teach providing a protocol that allows for communicating with disaggregated elements of a target device, among other things.

Claims 20 through 30 are allowable over the cited art by virtue of their dependency on claim 19.

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Request For Allowance

Claims 19-30 are pending in this application. The applicant requests allowance of all pending claims.

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